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ABSTRACT

This paper presents a kindergarten teacher's attempt to implement a process kindergarten curriculum which emphasizes the three skills of perceiving, creating, and decision-making. The experiences, materials, displays, books, and projects used in the curriculum are described. For each skill area, specific dimensions of focus are defined: (1) perceiving (growing in awareness of oneself, others, and one's environment) (2) creating (fluency in producing numbers of ideas and flexibility in producing ideas in many different categories); and (3) decision-making (recognizing that a problem exists, describing the alternatives, and evaluating the chosen course of action. Many of the projects mentioned in the skill sections were designed by the teacher, but one chapter detailing activities especially initiated by the children is included. Independence to pursue individual interests is encouraged in the classroom, and special emphasis is placed on teacher-student verbal exchanges and teacher observation of students to ensure that the children's academic and social qualities and needs are recognized and given attention. The three appendices include book suggestions for background reading, examples of graphical designs used in the classroom and a list of classroom displays. (SDH)

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Center for Young Children
Occasional Paper Seven

# A PROCESS CURRICULUM FOR FIVE-YEAR-OLDS

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College of Education
University of Maryland
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## PREFACE

How shall I teach young children "process skills" is a question often asked by experienced and inexperienced teachers alike? In addition, teachers are often plagued by gnawing problems posed by attempting to integrate pre-established objectives with the emerging purposes of children. A third problem which besets conscientious teachers is achieving a balance between group and individual endeavors.

In the pages which follow, Mrs. Joan Kissinger, describes her attempts to teach aspects of process skills of perceiving, creating, and decision making to five-year-olds. In her personalized approach she discusses her efforts at integrating her ideas of what young children should experience and know about these processes with the ongoing concerns and purposes of the children. Informal attempts at evaluating the growth of children in developing process skills are scattered throughout the chapters. The reader will also find evidences of teacher and child contributions to establishing the learning environment. It should be noted that children and teacher all assumed responsibility for establishing, rearranging, and changing the setting in which all work and play for several hours daily.

The last part of this Curriculum Memorandum contains illustrations of individual and group endeavors which grew out of the interactive setting but were not directly related to pre-planned teacher objectives.

Process skills are necessary for persons to live responsively and responsibly in the setting of which he is part. Mrs. Kissinger's work is one example of a community of children and teachers attempting to live

together so that the perceptions of all are enlarged, the opportunities for creative expression are ever-widening, and persons living in the classroom community--both teacher and students--are encouraged to make, evaluate, and live with minor and major decisions.

Mrs. Kissinger's work is shared with the reader not with the intent to perscribe what ought to be but rather to provide one example of how one teacher dealt with the highly complex task of teaching the young. The reader might want to consider the following questions as he reads:

> Do I agree that the process skills which Mrs. Kissinger selected to teach are critical skills for the young child?
>
> Do I agree with the balance of teacher and child responsibility for planning and implementation?
>
> How do I feel about the balance of individual and group endeavors which are reflected in this Occasional Paper?
>
> How would I carry further certain of the ideas expressed in this Occasional Paper?

I am indeed grateful to Mrs. Kissinger for sharing her insights with those of us concerned about the lives and welfare of the young and having the opportunity to include this paper in the publications of the Center.

Louise M. Berman
Professor and Director
Center for Young Children

# INTRODUCTION

This project was an attempt to implement a process curriculum in terms of building a file of experiences and materials for five-year-olds. Three process skills--decision making, creating, and perceiving--were chosen as the curriculum focus for one semester. Each process skill was then further broken down into more specific skills or behaviors deemed teachable goals. This was necessary to insure that the planned experiences would allow for continuity and systematic progression in learning each skill. The teacher-planned experiences and materials were used for 'setting the stage', to provide opportunities and experiences for the children to create, to make decisions, and to grow in their awareness. All children were not required to participate in every activity. An equally important part of the curriculum was to use the children's interests as the basis for planning individual activities. Children were given opportunities and encouragement to extend individual projects as far as possible. The teacher's role was to help each child recognize the use opportunities for creating, making decisions, and becoming a more perceptive person within the realm of his individually expressed interest.

What follows is a description of experiences, materials, displays, books, and projects actually carried out in the five-year-old classroom of the Center for Young Children, University of Maryland. It is not an <u>in toto</u> program for teaching process skills. It is merely a description and evaluation of one teacher's attempt to plan and implement a process curriculum during one semester in one kindergarten, and limited by time and by the freshness of

teaching process rather than subject. Each section begins with a description of the specific dimensions it was hoped could be achieved under each of the three chosen process skills. Examples of both teacher-planned and child-initiated experiences for teaching the process skills are included. An evaluation on the basis of what actually occurred in the classroom when the program was implemented follows each section.

Although the activity and materials are separated by a particular process skill for the sake of organization, in actuality they were intertwined. For example, many of the activities planned to increase awareness were followed up with creative thinking and creating with art materials activities. Although essentially engaged in what were labeled as experiences to increased perception, the children were also constantly helped to become aware of the choices they had and decisions they were making. Moreover, whenever possible, each child was encouraged to verbalize his feelings and thoughts about his activity. Verbal exchange with the teacher was an attempt to help the children clarify their thoughts and feelings, thus further focusing on growing in self-awareness.

# CHAPTER ONE

## PERCEIVING

As emphasized in this program, the writer defined perceiving as "growing in awareness of oneself and of the people and objects within one's daily world." The specific dimensions of perceiving focused upon were:

Perceiving:

A. Growing in awareness of oneself
   1. awareness of the physical attributes of oneself
   2. awareness of emotions and feelings
   3. awareness of the senses of sight, sound, taste, touch and smell

B. Growing in awareness of other people
   1. awareness of one's family
   2. awareness of one's culture and other cultures
   3. awareness of the distinction between reality and fantasy (fairy tales, legendary heroes, folk tales)

C. Growing in awareness of one's environment
   1. awareness of time
   2. awareness of quantity (number and weight)
   3. awareness of form
   4. awareness of nature and beauty

# AWARENESS OF ONESELF

## PART I: AWARENESS OF THE PHYSICAL ATTRIBUTES OF ONESELF

### Introductory Activities

It seemed reasonable to begin to increase awareness with building a deeper understanding of the self. The young child's speech and activities reveal the strong interest he has in his own world--in his toys, his friends, his feelings. Moreover, building upon personal interests provide natural and captivating motivation for classroom activities. If a child sees and can understand all of his powers and capabilities before he acts, surely he will have the tools essential to act in a more thoughtful manner. If he understands the way he is growing and changing, surely he will be able to participate in the act of living to a fuller degree. He will be a more flexible individual, accepting himself at each stage of growth and willingly attempting the new and untried.

Becoming aware of one's physical attributes was introduced by sending a newsletter home to parents which defined and explained the focus on perceiving oneself and requested each parent to send in a baby picture of his child. Children brought in their pictures and shared them during morning news and planning time. The children tried to figure out who was who. We tried to figure out HOW we could tell whose photograph it was--were there any clues in the picture, a smile, the eyes, the coloring--was the clue still there? Each child mounted his own picture on a bulletin board display. Later, the teacher added names next to each picture.

During our news and planning time we discussed how we could now get another picture of ourselves in order to see how much we had changed from our baby pictures. It was agreed that we would trace each other on the

large paper roll and used mirrors to note and paint eye color, hair color, details of clothes, shoes and so on. The children worked in self-established pairs, with one not only tracing the other but also engaging in often lengthy discussions about what was the color of eyes, hair, and clothing. Each child cut himself out and each figure was mounted in a row by the teacher and the child. The cutouts were brought into discussions on subsequent days whenever possible.

## Awareness of Height

Each child's height was marked against a long strip of paper and, together teacher and child used a yardstick to calculate the measurement. Each child wrote his name on his strip and tacked it onto the wall. Discussion spontaneously erupted within small groups as the children were being measured and as they were hanging strips on the wall about who was the same size and who was bigger. Afterwards, I mounted the strips on a backdrop and ordered them by size, from tallest to shortest. The following morning when the group assembled, we met in front of the chart. The children were asked, "What things do you notice?" "What can you tell me about our chart?" From their discussion and consensus of opinion, the following statements were written and hung above the charts:

"Vincent and Donnie are the tallest."

"Tina and Chi-Chi are almost the same."

"Five people are the same size."

## Using Charts to Increase Awareness

The activities focusing on awareness of eye and hair color emerged from a discussion of the height chart and the birthday graph (see Figure 1 in Appendix B.) Various children suggested we find out weights, eye color

and hair color and a committee of four volunteered to gather the information. Each child was weighed and his weight recorded. Then each child was asked the color of his eyes and hair. When children did not know, we looked in a mirror and determined the information. At the end of the morning, the committee and I discussed the ways we could graph or chart this information so it would be clear to all of us. One child suggested that the colors be placed in a row--"All the one kinds together." It was much more difficult to think of a way to record weights. Laura finally suggested, "You could put how much and then draw a line to it, and put all the boys and girls names to it."

After school, I cut out eye shapes in blue green, blue, brown, and dark brown, and squares for the hair colors of yellow, light brown, dark brown, and black. I then wrote each child's name on the appropriate symbol. I decided to do the cutting in this instance because the focus here was not on drawing or cutting skills, but rather on perceiving hair and eye color as it related to our children and on decision making in deciding how to arrange the charts.

The first thing the next morning our committee of three assembled (one no longer was interested). Laura took the squares showing hair color, Jennie took the eye shapes, and Jimmy arranged the colored circles above the correct number of pounds by matching each symbol to the chart information we had gathered the day before. Each child was told to arrange the symbols on his chart in the best way he could so it would be clear to the rest of us; and then he was to pate them on. At the end of the morning, the whole class looked at the charts and wrote statements about each of them. (See Figure 2 in Appendix B.) The children noted,

"We have more blue than dark eyes in our room."

"There are more people with black hair."

Children also noted whose names were in the same row and which ones had the same color hair, eyes or weight they did. The charts were used on several succeeding days to "sing" instructions of whose turn it was to do various things. For example, we would sing and hold up a chart, "All those with light brown hair can go get their sweaters on for going home."

By this time, the children were very excited about all of their charts and graphs and I marveled at how often they were referring to them and at the frequent spontaneous discussion I observed by groups of twos and threes. Overheard comments, such as, "I never knew you had hair like me," prompted me to continue activities which promoted such discussions of likenesses and differences.

## Footprints and Handprints

Paper towels, about four thick, were placed on the bottom of a small, flat plastic dish. Black tempera paint was spread all over the paper towel and allowed to soak in, much like an ink pad. Each child removed his shoes and socks, stepped into the black tempera, and placed his foot on light construction paper to make a footprint. Then the child stepped into the tub of warm, soapy water to wash his feet. Names were written on both pieces of paper and they were set out to dry. Two footprints were made for each child so we could have one to display at school and one to take home. In our later group discussion of the display, we agreed that feet are another part of the body which can be different and/or the same in shape, width, and length.

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For making handprints, all the necessary materials were placed on a table and the children's curiosity drew them to the activity. Later, when

some children started mixing the materials and talking while their hands were in plaster, their giggles and comments ("like mud," "sticky," "cold," "like sour cream") attracted others. The prints were made by putting a hand into a plaster of paris mixture in foil pie plates. The children automatically began to compare their hands by placing one hand into a peer's print and discussing whose fingers or whole hand was bigger. Hoping this would happen, I had prepared a nearby table with paper and tempera ink pads (like the kind used for the footprints) so the children could confirm their comparisons by making wrapping paper of handprints. Interest and discussion were high enough so that most children moved on from the plaster handprint activity to the inked handprint activity and continued their discussions and comparisons for linenesses and differences. In many cases, interest and discussion was so high that I observed such incidents as the following:

> Eric and Tina were matching their handprints and agreed that Eric's hand was a great deal larger than Tina's. Then they both walked over to their body cutouts on the wall and discussed how Eric was even larger than Tina in their cutouts.
>
> "My hands are bigger than yours and my WHOLE BODY is bigger than yours, Tina!"

## Silhouettes and Shadows

Before school a place was prepared for traing silhouettes. Black paper was attached to a portable chalkboard, a chair placed in front of it, and a filmstrip projector used as the light source. When the children arrived at school, we looked at a toy's shadow and discussed the meaning of silhouettes and shadows. Then each child chose a friend to trace his silhouette for him with white chalk.

One day for story time, I read The Shadow Book and the poem "My Shadow," by Robert Louis Stevenson. A lively discussion erupted about shadows. We

agreed to take a look at our shadows the next day at outdoor playtime. We did a great deal of experimenting with shadows the next day. Several children tried to make one shadow engulf another. Two children combined their shadows to make a 'monster' with four arms and one head. This quickly led to two and three-headed monsters, ones with numerous arms, fat ones and thin ones. We traced and measured one shadow and compared it to the child's actual height from our height chart. The children discussed how shadows were made. Playtime ended with shadow tag. The following day we extended the experience to an art activity of making shadow puppets (see the section on creating for details.)

## Expected Outcomes

I began the program with this series of activities hopefuily to carry the young child's strong interest in himself to a greater depth of awareness. I hoped the children would become more aware of the many ways their physical beings were constantly growing and changing. I hoped they would become interested and more aware of each other. I hoped they would come to understand and to accept their likenesses and differences, not only seeing each other in a new light but going beyond and discovering how these likenesses and differences complemented each other in the daily tasks of living together. I hoped they would grow in respect for each other as human beings.

The baby picture display was an exciting introduction. Small groups of children stood in front of the display discussing each other's appearances so often that the display remained for three weeks. Most of the photographs were sent in a few at a time and I found that the children were increasingly more eager to see them, guess who it might be, and discuss how they could tell. Several times different children walked into the room and immediately asked, "Who brought a picture today?"

Since the children completely made their own body shapes, the reality of the cutouts was limited by individual skill in tracing, painting, and cutting. As a result, I found the children becoming aware of more minute and sometimes rather abstract physical attributes of each other as they viewed the row of cutouts to see if they could figure out who it was. For example, children said,

> "I could tell that was Laura because you can see how her pigtails stick out."
>
> "That's Jimmy 'cause he's got glasses on. Hey--did Jimmy have glasses when he was a baby?" (They went to check the baby picture display.)
>
> "That's Chi-Chi. She's littlest."

Some began to note likenesses and differences.

> "Jennie's got yellow hair, too. Same as me."
>
> "I don't. Mine's black."

Other children became more aware of details about themselves.

> "See, I've got my same black and white shoes on again."
>
> "I've got different shoes on today than my picture."
>
> "See, I've got blue pickets, so I painted that blue here."

And the doing brought problems with decisions to be made.

> "I've got sailboats on my shirt but we don't have pink. How am I going to paint that?"

Discussion with a student teacher elicited that the color we did have which was closest to pink was red. Another child then entered the discussion by suggesting we could "make red lighter." The subsequent discussion led the child to discover for herself how to make pink. There were some unexpected outcomes also. In spontaneously dividing themselves into pairs to trace around each other's bodies, a few new friendships were formed between classmates who had heretofore not 'noticed' each other in the room. Also, lots

of good conversation about such things as "What color are my eyes?" occurred and considerable helping behavior was fostered in figuring out ways to solve decorating and painting problems.

In the height and weight activities, the first and most obvious perceptions were who was tallest and heaviest. Lots of opportunities to brainstorm as a group in front of the charts proved invaluable. In the free flow of perception, someone discovered that two children were 3'8" tall. Brainstorming frequently as a group in front of all of our charts and graphs displayed together gave opportunity for more difficult, interpretive perceptions. "Yesterday Vincent was the tallest in our room and now he weighs the most!" The children moved beyond the obvious. Instead of identifying the shortest child, they noted that Tina and Chi-Chi, the two shortest, were "almost the same size," within one-quarter of an inch of each other in height.

## Unexpected Outcome

Tangential learning situations arose for both the children and for me, unexpectedly and constantly throughout the perceiving experiences. I was surprised to hear many children reading almost all their classmate's names from the charts so early in the school year. A mistake made confusing the name Jimmy, for Jenny initiated work with initial consonants and words beginning alike. I had the chance to note who recognized weight and height numerals and who needed more number recognition experiences. In the foot-printing activity, I discovered several children who struggled with typing shoelaces. We questioned whether Negro and Oriental eye color was really black as several children originally claimed or whether they were just so dark brown that they appeared black.

## Some Reflections for Future Consideration

At one point, we began to do some problem solving and body movement activities to increase body awareness. I directed such activities as hiding various parts of one's body inside a large cardboard box and then adding the additional problem of moving the box. These activities were valuable for following directions and for increasing awareness of body parts and knowledge of the function of each part. They were also enlightening to me as far as observing individuals for their space awareness, body awareness, and perceiving body relationships. Lack of space within the room and involvement in other projects curtailed the planned body movement experiences, however. I feel this is a valuable part of increasing the awareness of oneself and suggest further exploration in this area.

What was extremely important throughout this program was referring to children's past experiences as often as possible. The charts and graphs were referred to and utilized constantly. The children's signs, labels, and stories were read individually and collectively again and again. Children's verbalizations were frequently typed, run off on a ditto machine, and put into booklets for each child to take home for his own library. Parents, kep up-to-date on the activities through newsletters, reinforced the school experiences at home.

## AWARENESS OF ONESELF

## PART II: AWARENESS OF EMOTIONS AND FEELINGS

Becoming more aware of one's emotions and feelings includes becoming more aware of the meaning and causes of those feelings. If the child understands his feelings and what prompted them, he is more prepared to accept and to control those feelings. He is also then better equipped to reflect upon his subsequent actions.

### Identifying Emotions

Early one morning, as the children gathered for our news and planning time, we sang the song "If You're Happy and You Know It." Afterwards, I showed them five enlarged commercial photographs, each of which depicted some problem situation for a child. The group discussed each problem picture individually while I guided the discussion with such questions as:

What is happening in this picture?

How do you think this boy (girl) feels?

Why?

What else?

Any other reason?

How can you tell he feels that way?

What clues in the picture show you how he feels?

After each problem picture was discussed, I showed the children four drawings of emotions being expressed. Each drawing was an inked sketch of a girl's face. One face depicted happiness, one sadness, one anger, and one surprise. First I asked the children to identify the emotion and then asked, "How can you tell that is the feeling?" I guided discussion in order to have

the children look closely at the eyes, the eyebrow position, the shape of the mouth, and so on. The children were asked to show the emotions, one at a time, on their own faces. We repeated showing the emotions, one at a time, on their own faces, but this time the children formed pairs. This enabled them to examine closely the eyes, eyebrow position, the shape of the mouth on their partner's face as they depicted emotion. As a conclusion, I showed the children a homemade 9" x 12" flannel board shaped like a face and an assortment of felt flannel pieces of facial parts (eyes, noses, eyebrows, mouths). These materials were set out on a table for open-ended use by all, along with the four sketches of emotions. Much involvement followed over a three-day period in which this same material was left out. Children repeatedly went back to the flannel board to "make faces." A great deal of valuable discussion about feelings and considerable attention to facial details in expressing emotions occurred when children congregated at the table in two's and three's and worked together arranging and rearranging the felt pieces. This same type of activity was repeated on a number of different occasions in our room, merely by changing the problem photographs used as well as the felt flannel pieces of facial parts and by adding different sketches of emotions.

## Reinforcement Through a Variety of Experiences

Each time I reintroduced the above experience of expression of emotions, I followed it up with the following art experience: Paste, scissors, manila drawing paper, pencils, lined writing paper, assorted construction paper cutouts of different colored and shaped eyes, noses, mouths, eyebrows, fringe, and other hair pieces were set on a table. Children used the materials as they wished. I observed while they manipulated the shapes and we talked about the emotions expressed in the pictures they were making. I also

emphasized the many different and creative ways in which the materials were being arranged and pasted. The children were encouraged to dictate a story about the picture of emotion they had created. The "emotion pictures" were arranged for display on a bulletin board.

Many pictures of faces depicting various emotions were cut out of magazines. The pictures were separated by the children according to emotion shown and then pasted on long paper to make murals of feelings.

At other times, using a variety of records--light, happy music, deep glum music, scary Halloween music--the children chose colors and finger-painted the way the music made them feel.

## Abstract Experiences with Emotions

Containers of assorted tempera paint, paint brushes, and white drawing paper were set out on a table. As children came to the table, they were asked, "If you were a color today, what color would you feel like?" They were then directed to "paint a picture of the color you feel like today." Afterwards, they dictated stories to go with their pictures. As reported later in the outcomes section, the abstractness of this experience proved rather difficult the first time it was tried. For that reason, it was repeated several times, a few weeks apart, and the children's stories reflected that they were engaging in a deeper thought process each time.

Similar to the above experience, large sheets of paper were spread on the floor. The children were asked, "If you were an animal, what kind of an animal do you feel like today?" Each child laid on a paper and arranged his body to depict the shape of the animal which he felt like. He was traced and went off to paint and cut out his animal self. Stories were dictated explaining why each child felt like that particular animal that day.

Several stories and poems on the theme of wishes and dreams were read to the group for motivation. The children were told,

> We've heard so many stories about wishes and dreams. Let's pretend that a magic fairy came to our classroom and told each of you that you could make any three wishes you wanted to and she would have them come true. Now think very long and carefully and tell me what three wishes you would make.

One day for story I read the book Talking Without Words. It was followed with a lengthy discussion of how a person can coomunicate without using words. I suggested a few situations and asked for a volunteer to act out each without using words.

> You fell down and cut your hand and it hurts very much. Show me how you could tell your mother what happened WITHOUT using any words at all.

The few situations I projected for children to communicate without words were followed by situations they thought up and wanted to act out. The rest of us became the audience and tried to figure out the message. At the end of the experience, the group agreed that, next to words, your face and hands are important ways to communicate.

## Outcomes and Reflections

My goal in focusing on perceiving emotions and feelings was to provide the children with opportunities to interpret emotions more clearly and to increase their skill in perceiving and understanding what caused emotions exhibited daily by peers. Ultimately, I had hoped this would lead to a better communication process within our classroom in that, with increasing skill, children would more easily and openly verbalize how they felt to their classmates.

Perceiving emotions proved to be fairly abstract and rather difficult for the majority of children in the initial experience. In discussions, the

children at first made only obvious, surface comments. In manipulating facial pieces, the initial interest was simply the manipulation itself rather than any thoughtful portrayal of emotion. The activity of choosing to be a color was typified on the first attempt by such comments as "I don't know." or "I never was a color before." These outcomes resulted in my decision to repeat each of the experiences several more times, at different points in time. I assumed that with practice in perceiving emotions and feelings, the children would become more skillful. My observations and record of what happened each time seem to indicate that the assumption was a reasonable one. Two children who simply randomly painted at first in the "what color are you?" experience went on in later experiences to paint intricate designs which matched their clothes and dictated stories about "feeling like a bunch of checks today" and "I would like to be blue and green because I feel pretty today" (she had on a blue and green outfit). Other children who initially could not verbalize why they chose a particular color were able, in later attempts, to dictate such feelings as, "I'm yellow like the sun today because I feel bright and happy," and "I used black and brown and the dark ones because I don't like anybody today" (the child had had a difficult morning). In later art and flannel-board activities in pasting or manipulating facial parts, the children perceived the shapes in more unique, detailed, and creative ways. One girl moved from using the pre-cut fringe for hair to cutting it herself into shapes for eyelashes. Another used the pink mouths for eye shadow. Several used what had been pre-cut as dark eyebrows for mustaches and beards.

## AWARENESS OF ONESELF

### PART III: AWARENESS OF THE FIVE SENSES OF SIGHT, SOUND, SMELL, TASTE, AND TOUCH

As educators, it is our responsibility to equip children with the tools necessary to function adequately in a rapidly changing world. Our children must be prepared to move forward accountably within the new and unknown; to be thoughtful initiators of action; to be flexible interactors with a variety of people, ideas, and situations; to be ongoing and ever changing as life itself. An education which sharpens man's innate perceptions to the ultimate serves to rouse his initiative and creativity. As the natural mechanism of being receptive and responsive is developed to its fullest potential, so, too, will be the understanding and appreciation of life and living.

Different amounts of water were poured into four glass soda bottles and set out along with a metal spoon. Individually, children experimented with the different sounds which varying amounts of water produced.

A set of unused filmstrip containers were turned into sound containers and set out for individual experimenting. The six containers, labeled A to F in red, each contained a different material (pebbles, rice, sand, beans, seeds, and metal discs). Each of six other containers, labeled 1 to 6 in blue, contained matching materials. The object of the activity was to shake, listen, and match the sound in containers A to F with the same sound in containers 1 to 6. Additional filmstrip cans and assorted materials were placed nearby so the children could make sound sets of their own.

I prepared and hid a corn popper in the vicinity of our story area. A long extension cord was attached and plugged in at the appropriate time so that as I neared the end of reading a story about listening to sounds, we began to hear a popping noise. The children were extremely involved in

listening to the sound and trying to figure out what it was. About the time that someone guessed what it might be, we began to smell the corn and the children traced its location. Before eating the popcorn, we examined how much space the corn expanded into from the tiny kernel it was before popping. This concept was further exemplified by comparing the size of a can of shaving cream to the amount of shaving cream inside by spraying it all out into a pile.

Often on trips or within our own classroom we would stop as a group to listen and identify the sounds we heard. A favorite outdoor rainy day listening game was to go into our playground storage shed and listen to the rain drops on the tin roof.

We saw several fimstrips on the senses. Large models of the eye and ear are useful to have on hand so the children can perceive more than just what is outwardly visible.

Cooking in the classroom was a frequent experience and the source of many opportunities for awareness of smells, tastes, and touch. A typical experience was to take one item, such as the box of apples we brought back from a trip to the orchard and have the children cook them in a variety of ways. Often, the children themselves would list the different ways they wanted to cook an item as they did in this case: Sliced, whole, baked, applesauce, apple pie, caramel apples, apple crisp and apple salad. I did plan an additional series of new tasting experiences for snack time one week. This included persimmons, a fresh pineapple, fresh coconut, mixed nuts for cracking, and fresh fruit salad. Each food was set out the day before it was to be eaten for the children to examine, touch and share their knowledge. Several children compared the small, sweet persimmons which had been grown in my yard with a larger and, in one case, bitter store-purchased persimmons

they had previously tasted at home. Many children could not identify the pineapple plant. We compared the taste of fresh pineapple to that of canned pineapple. We also dried the crown to grow a pineapple plant for our room.

The coconut was a fascinating experience to all. Early in the morning children shook it, listening and trying to figure out what could be inside. How to drain the liquid was a difficult problem. Finally, one child suggested we use a hammer and screwdriver from our workbench which sparked much fun. (After draining, baking the coconut at 350° for thirty minutes makes it easier to open.) We shared a delightful tasting party afterwards, with many children awed by the thick shell, its feel and appearance inside and outside, and the taste of fresh coconut.

Armed with all the nut crackers we could bring in, plus several hammers, we shared an adventuresome group snack another day cracking mixed nuts, sorting and identifying them by kind, and comparing the different taste of each. The shells and leftovers from other tasting experiences were saved and used in follow-up creating activities on subsequent days (See Chapter 2: Creating).

## Outcomes

Following the planned experiences and the constant stopping to listen or smell as a group within our own room and on trips, many of the children exhibited more awareness of senses of smell and hearing. Frequently it was some child who noticed a sound or smell and initiated comments about it to the rest of the group. Some children began to talk more in their other daily activities about what something sounded or smelled like. Several children were so fascinated with the newness of the tasting experiences that each time they asked to take a piece home "cause I want my mommy and daddy to taste it, too." One child who was a fussy eater and frequently didn't eat his school snack now began to eat snack and to even try small portions of other things

we cooked at school. A few children constantly commented "I didn't know you could eat . . that way, too!" They seemed to marvel each time they discovered that a particular food wasn't prepared in just one way. Several parents told me on different occasions that their child insisted they buy or prepare some food that we had had in school for the family, such as coconut and fresh pineapple. All of the above were indicators to me that the children were growing in awareness and use of their senses.

## The Future--Some Suggestions

What I have identified as the next step in this program, which we lacked time to pursue this semester, would be to move from an awareness of oneself into an awareness of other people. Planned experiences might begin with the family as important 'other people' to the young child. It would be valuable for children to grow in awareness of the beliefs, traditions, celebrations, foods, practices, and changes of their own culture as well as those of other cultures with which they come in contact. It might be worthwhile to introduce the 'other people' of fantasy, such as legendary heroes, folk characters, and fairy tale characters. This series of experiences could then move into experiences which would build awareness of the environment. A suggested organizational division might be: awareness of time--awareness of lived time, of the scheduling of time, of the passage of time; awareness of quantity--of the relevance of number and weight to the child's life; awareness of form--of size, shape, and structure as it relates to the world in which he functions; and awareness of nature and beauty.

Extensive usage of poetry and children's literature might be valuable inroads to such experiences. Dance and movement activities might help to increase awareness of form and of beauty. The medium of art can also enhance

perception of balance, rhythem, and form through activities with design, color, and structure.

Outdoor experiences to examine nature might also be planned--experiences to explore patterns in animals, such as the symmetry in butterfly wings; patterns in life, such as the four seasons; patterns in nature, such as the cycle of the frog or the cocoon. Beauty can be brought into the classroom through the thoughtful arrangement of projects and furniture, the use of displays and color to heighten aesthetic appreciation, and utilizing music.

## CHAPTER TWO

## CREATING

Fluency and Flexibility appear as traits on practically every list of characteristics of the "creative person." Deemed vital skills in the creative process by the author, these two traits were chosen as the specific dimensions upon which to focus for the semester.

Creating, as emphasized in this program, is defined by the author as "the process of producing new and unique ideas and relationships out of usual and ordinary elements of experience."

Creating

1. Fluency--producing a large number of ideas and relationships.
2. Flexibility--producing a large number of ideas and relationships in many different categories.

### Techniques to Stimulate Fluency and Flexibility

The situation presented to the children usually stimulated fluency or the flow of lots of ideas. However, the teacher's questioning technique was important to stimulate ideas and utilize them flexibly. Questions were raised as the following:

> "You've named all things to eat. Can you think of something different now?"
>
> "All the ideas you said were for putting things inside this bag. What else could you do with this bag besides put things inside?"

Whenver possible, I tried to follow up experiences in the process skill of perceiving with experiences in creating, using the same theme. Also, I

tried to turn any item brought to school by the children into a creative thinking experience. The flow of ideas from the group seemed to give the child new "food for thought" about an object which was obviously significant to him. Since I focused simultaneously on the elements of fluency and flexibility in many of the following creative experiences, they are not organized by each characteristic but by theme.

During group story time, I used books related to the experiences upon which we were focusing. For example, I used stories related to growing up, body changes and learning new skills while we focused on perceiving physical attributes of oneself; stories about children's feelings and emotions; and stories about sounds, foods, looking and listening while we emphasized the senses (see Appendix A). Frequently, the story was used for motivation and was followed by a related creative thinking experience involving the majority of the group. For example, the story The Pile of Junk tells about different people passing by a little old lady's piloe of junk. Each passerby has a use for one piece of the junk until only a pail with no bottom is left. After hearing the story, my children listed all the uses they could think of for the pail with no bottom.

## Creative Story Dictation

After a series of stories about five-year-old children changing and growing, I asked, "What kinds of things can you do now that you couldn't do before?" I recorded their ideas and encouraged flexibility with other questions:

"What can't you do yet?"

"In what ways has your body changed?"

"How have your feelings and ideas changed?"

In the experience, the children did do some thinking about changes within themselves as exemplified in some of their ideas:

Being Five Years Old Means--

> . . . you play games; you play more rougher; ride a bigger bike; play football and kickball; play train; ride a two wheeler--you can balance on it now; you get a training wheel bike; you can whistle; help make pizza; you lose a tooth; your clothes don't fit--they stretch out and break and you'll be naked; you can't be a teenager; you can't drive a car; you can't mow the lawn. . .

Fluency and flexibility of ideas can be further stimulated with similar creative story dictation on such related themes as: Sadness is . . .; Boys are . . .; Girls are . . .; Teachers are . . .; I worry when . . .

One day I hung a large cardboard cutout of Snoopy from the ceiling. Below him hung a sign which read "Happiness is . . ." We turned Snoopy into a mobile with all the parts being the children's ideas of what happiness was to each of them.

## New Uses Game

One day David came to school proudly wearing new shoes. He also brought to school the odd-shaped, long, narrow paper bag in which his shoes came home from the store. He seemed fascinated with the bag and showed it to everyone who would pay attention. At the end of the morning when the whole class was assembled for story, we set the timer for five minutes. The directions I gave the group were that, in that amount of time, they were to think of as many different ways to use David's paper bag as they could.

The children enjoyed racing their flow of ideas against the timer and we shared this creative thinking experience often. When a child brought in a handful of bottle caps to add to our junk box, we again set the timer and thought of as many different ways to use a bottle cap as possible. Other items the children brought in for which the same creative experience was used

are: a rock, milk carton, the plastic rings holding a six-pack of cans together, a straw, a tiny box, odd-shaped jar lid, marble, fruit seed, new mittens, and woolen scarf. Sometimes we used objects found in our classroom which seemed to catch a child's eye as the basis for our timer game; a feather from our classroom parakeet and the wishbone from the turkey we cooked in school at Thanksgiving.

## Creative Inventing

The children so enjoyed our games of thinking up new uses for ordinary objects that the game led to a series of inventing experiences. One morning I moved an extra shelf unit next to our art supplies and creating materials. The shelves were stocked with boxes, and cardboard tubes of assorted sizes, string, styrofoam in various sizes and shapes, milk cartons, empty plastic bottles and containers, spools, scrap material, telephone wire, and a variety of wooden and metal "junk" from our junk box. When the children arrived in the morning, I read them the story The Big Orange Thing. We discussed how they had been "inventing" new uses for objects the weeks before and the theme of the story served as additional motivation for the children to become "inventors." Each day last week we focused on being a different kind of inventor and read related stories (see Appendix A) as well as dictated stories to accompany the inventions. We invented new machines, a strange new animal, a new home for a person or animal to live in, a new chemical, medicine or liquid, and a new snack. For inventing a new chemical, medicine or liquid, I added beakers and assorted clear liquids to the area: baby oil, vinegar, rubbing alcohol, water, corn oil and perfume. The activity of inventing a new snack tied in nicely with our perceiving the sense of taste experiences. Each child was given one of the apples we had collected on our trip to the

orchard. On our cooking table were arranged toothpicks, raisins, grated carrots, small marshmallows, celery pieces, gum drops, chunks of apple and small paper plates. The children assembled the foods in any way they wanted, named their snack, and later, we ate them together. All of the inventions created that week and the dictated stories were displayed and shared with the entire class.

## Using the Senses

Several other creating activities accompanied the experiences to increase awareness of the senses. Various fruits and vegetables (cucumber, onion, orange, lemon, carrot, and potato) were prepared for vegetable printing before the arrival of the children by carving a design on them (see Figure 3). Stamp pads of various colors and manila drawing paper were set out also. The children used the fruits and vegetables freely as they wished. The 'carrot flower' stamp was quite popular and was used in some very creative patterns and designs by different children. The many different ways the children used the stamps was brought to their attention and encouraged throughout. Two other very popular and very creatively used stamps were the 'arrow' and the 'X'. Several children used these to make treasure maps.

Three small bottles were filled with moth balls and covered with dark tissue to hide the contents. The children were divided into three small groups and worked with either the teacher or a student teacher. In small groups the children didn't have to wait for turns at smelling the mystery jars and it gave us a different way to compare our ideas. The children could only use their sense of smell and each group wrote a story in answer to the teacher's guiding questions: "Who's in the jar? Why is he in there? With that smell, what kind of person might he be?" No one guessed it was

moth balls, although after the experience was over and the jars were uncovered, about a fourth of the class recognized the moth balls, having seen them before. Relating a mystery smell to a kind of person took the three groups in rather different directions as evidenced by the stories they dictated below, although the strong moth ball aroma seemed to have a heavy, mean, fearful connotation for all groups.

> GROUP 1: This person in the mystery jar could be a soap man. He might be a jarman. He has a friendly smell. It smells like a _____ store bag (named a local department store.) He climbed in the jar because he wanted to hide. He was scared of a skeleton. He holds a number 4 for a sword. His name is Five.
>
> GROUP 2: It's a mean man inside that is a pirate. He is a bad pirate with a sword to kill. He has a black patch on his eye. He wants to fight. He is on his ship hunting for someone. He's on a black ship. When he gets off, he's going to make camp. He found people and cooked him and then he went back to his ship.
>
> GROUP 3: A weak person tried to make himself big and strong. He ate meat sandwiches and jelly sandwiches and hard boiled egg and tomato and salads. He got big and strong and grew and grew and grew and finally he turned into a giant. After a long time he died. The end.

Similar experiences can be conducted creating other mystery smells with such things as soap, perfume, lemon, extracts, onion, ammonia, and floral scents.

Fluency and flexibility of ideas related to using the senses can be further stimulated with topics such as: What are the sounds of Christmas (Halloween)? What is the smell of new? What is bitter (sweet or sour)?

The nut shells from our nut cracking party for tasting were saved and used for creating collages on meat trays. Shredded coconut was dyed with food coloring and also used for collages on the day after we tasted fresh coconut.

One little girl became very interested in turning our housekeeping kitchen into a Chinese restaurant. Some asbestos modeling material and a

variety of plastic foods were provided for closer observation so she could "make food" for the restaurant. (This modeling material is made with asbestos, about ten cents a pound at the hardware store. Add a small amount of water and a small amount of wheat paste until you reach the proper consistency for modeling. It has excellent hardening qualities and texture and can be painted after drying thoroughly.) Chi-Chi created a wide variety of Chinese dishes, from egg noddles to soup. The most exciting result of this activity, however, was the number of other children who joined her. Four batches of the modeling material had been mixed by the end of that morning. Interestingly enough, many other unexpected outcomes resulted. Considerable discussion ensued about the shapes and sizes of various foods the children were making and encouraged closer observation and attention to detail of the assortment of plastic foods set out. When one child started making eggs, another got out an egg carton from the junk box to put them in. A valuable learning experience followed in counting the eggs and introducing vocabulary like dozen and half dozen.

## Utilizing Class Trips to Stimulate Creativity

Whenever the children brought back collections of things they had "noticed" on class trips, I tried to incorporate their perceptions into creating experiences. Strong interest was shown in a collection of rocks the children brought back from a trip to a construction site. I extended the size of the collection and asked the children to look at the rocks closely and see if the shape of the rock reminded them of some animal, person or thing that they could turn it into. The same day on a separate table, as a follow-up activity to our work with shadows and silhouettes, materials had been arranged for making shadow puppets. There was such excitement at

both tables about creating puppets from the material and putting on a puppet shadow show with light from a projector that the children spontaneously combined all the material. This activity continued over several days with a rewarding assortment of puppets, storytelling, and role playing. Rocks were used to create alligators, bugs and assorted people. Original shadow puppet materials were used mostly to make types of people.

Trips were invaluable in building perceiving and creating skills. Before each trip we outlined together the things we would look for or the questions we would ask. This gave the children specific things to think about. We also made our trips additional adventures. If we knew the things we could expect to find on our trip, we would divide up who would bring back what for a display--rocks, samples of soil, grass, leaves, who would do rubbings or make a sketch. Sometimes we just all focused on looking for all the red things we could see on our trip or all the things that were round, that could fit in the palm of your hand, that your mother would like and so on. Trips were always followed up with displays, stories, signs, labels, and discussions.

## Outcomes and Reflections

The purpose of this focus was to provide as many opportunities as possible which would encourage the flow of ideas. I found that a significant part of helping children grow in flexibility, producing ideas in different categories, was the mode of teacher questioning within each experience. For example, I found it was not enough to merely ask the children "What does it mean to be five years old?" Their thoughts were stymied after their first reactions. It was necessary to open up new areas of possibility within their thinking with such questions as:

"What kinds of things can you do now that you couldn't do before?"

"What can't you do yet?"

"In what ways has your body changed?"

"In what ways have your feelings and ideas changed?"

The value of the questioning technique and the need for it in helping children to develop their creativity was evident throughout every creative thinking experience. Children's initial responses were often shallow because of their limited experience. The responsibility of the teacher was not to impose her own ideas but to guide the children's thinking, to introduce many other broad alternatives which could awaken each child's thinking along new, previously inconceivable lines.

Since this project was a pilot study in curriculum formation and I was focusing on several process skills at once, it was not my intention to administer a specific creative thinking test to all members of the class at this time. However, it did seem feasible, though not scientifically controlled, to record and count the number of ideas and the number of different ideas for the whole group to see if fluency and flexibility correlated with amount of practice in developing the process skill of creating. It should be noted that such a method of casual assessment has numerous limitations--the experiences were not uniform in theme, form or time element, there were no controls for maturation or outside influences, and the children were not all required to participate in every activity or randomly selected. However, this casual assessment did reveal increase in both the number of ideas and the number of different ideas for the group's responses as a whole. For example, one of the first creating experiences on what being five meant tallied fourteen ideas over the four categories of new games, new skills, change in adult permissiveness, change in body. A later creating experience on "what is happiness" tallied nineteen ideas over eight categories. Similar

evidence of growth in fluency and flexibility of ideas appeared with the timer and new uses games. The first experience, thinking of new uses for David's paper bag, tallied thirty-one ideas over eight categories. A later experience, thinking of new uses for a bottle cap, tallied thirty-one ideas over thirteen categories.

Individual children began to want to dictate a greater number of stories, signs, and labels to the adults in the room. Moreover, their stories, signs, and labels became elaborate even though this dimension of creating was not a specific curriculum focus. Initial signs on block buildings by two boys read,

"Stop Stop Stop Stop Stop Stop."

A later sign read,

"Do not break our fort or else we'll fight you."

Still, a much later sign by the same two boys read,

> "Nobody in Ben and Clemens house. If we don't tell them to get away, we might hit them. If they still don't get away, we'll bite them. We will still go more on a different piece of paper."

And on the next paper was dictated:

> "When we aren't there we will be eating our snack. And if we are away you may borrow our magic markers. But don't take some blocks and when you took some we will hit you. Put the messes back. Goodbye, Ben and Clemens."

Using things the children brought to school or an interest they expressed as the basis of a creating activity seemed quite valuable for the individual child concerned. Afterwards, he appeared to treasure that object even more or get further involved in his expressed interest in a different way. My observations led me to believe that the child had gained some new insight as a result of the group's brainstorming which caused him to go further in his interest.

As time went on and the week of inventing was over, I observed many children still going over and utilizing the junk box more on their own than they had before. In addition, many children began to bring in bits of scrap which they had found to add to our junk box. Overall, as a group, the children seemed to do more and more looking and finding of 'treasures' in school and at home. They enjoyed mysteries of any kind and seemed more willing and more eager to hazard guesses than before. As a group, they also seemed to be relating and associating things more, such as spontaneously combining the rock and shadow puppet materials.

## CHAPTER THREE

## DECISION MAKING

Decision making, as used by the author, is defined as making realistic and meaningful choices. The specific dimensions focused upon were: Decision Making:

1. Recognizing that a problem exists
2. Describing the alternatives available to solve the problem
3. Evaluating the chosen course of action

In this curriculum project, teacher-planned experiences focused primarily on the processes of perceiving and creating. Decision making was focused on through the child's daily scheduling of his activities, sharing in the planning, increasing realization of his opportunities to make decisions, and emphasis on evaluating the decisions which he made.

### Beginning the Day

School days frequently began with a brief news-planning time in which the entire group was required to participate. This was a time for announcements about changes in the routine or special visitors, instructions in the use of new equipment, and sharing happenings at school and at home. It was a time to solve those problems and reach agreements on decisions which affected all of us. Thereafter, each child was responsible for deciding how he would utilize the remainder of his school day. Frequently, especially in the beginning of the school year, I asked each child to share with the group at that time what he had chosen to do. This served as a good initial

way to help children begin to realize that they were making decisions and presented new alternatives for some children having difficulty deciding what to do. I helped the few children having difficulty deciding what to do. I helped the few children who initially had difficulty in deciding what they wanted to do by narrowing the choices of activities to choose from to two or three.

## Organization and Arrangement

Basic activities and supplies in the room were arranged into rather permanent areas and interest centers to facilitate independence in obtaining and returning materials. Displays, exhibits, and furniture were moved by the teacher or children as new projects and experiences developed. However, the occasional change of a basic area was clearly indicated and explained so that independence of movement would not be hampered. Each child was free to use all of the materials and equipment within the room at any time with the limitation that his activity would not interfere with, harm, or disturb someone else's work. Each child was held responsible to clean up after himself and was encouraged to help another clean up when he had finished. The children accepted the fact that, with freedom of choice, came definite responsibilities.

## Snack Time

I had found from personal experience that when children were permitted to choose freely and were encouraged to become deeply involved in projects, they often resented an interruption of their train of thought and concentration which required them to participate as a group in another task which was irrelevant and unimportant to them at that moment. At such times, children would participate if required but would do so with frustration and anger,

often displaying their feelings in some form of behavior problem. For that reason, I experiemnted with a totally independently planned and scheduled use of time.

A series of cubbies were built, one labeled permanently for each child. Each cubbie contained enough room for that child's portion of juice and snack to be inserted and removed easily. Early in the morning, several different children always volunteered to count and set out snack for everyone in their cubbies. Each child then decided for himself when he was hungry and when he had reached a point to break away from his project and eat his snack. Several children recognized early that eating snack immediately after it was set out had been a poor choice. The snack cubbies were set up in the housekeeping kitchen area along with two small tables, one seating two and the other seating four. I found the children usually ate snack in small groups varying from two to seven in size. Frequently, the groups had been involved in some project that day and took their break together. Sometimes, several groups joined each other, arranging and rearranging the tables and chairs to eat together. Occasionally, children chose to eat alone, enjoying the solitude as a time to think or to observe peers at work around the room. Whenever possible, one of the student teachers or I would join the changing groups to share our snack, too.

Each child was responsible for clearing and sponging his place at the table to prepare it for the person. To avoid tempting children unfairly, small quantities of assorted foods, such as carrot or celery sticks, apple slices, dry cereal, bread and butter or crackers and jelly, were kept on hand for children who were still hungry after snack. Children were trusted to tell whenever they were still hungry and to find out what they might prepare for themselves that day. The children have indicated they react with the same

amount of trust I give and expect from them. Moreover, preparing an additional snack was another means of encouraging independence and responsibility as well as a valuable learning experience in reading and following the snack preparation directions. At one point, this developed into a committee of three designing and writing a cookbook of these simple extra snack recipes for the housekeeping area. Of interest to note it that early in the year when I discovered that some children came to school without breakfast and brought up the idea of fixing an extra snack, everyone was instantly hungry. This novelty lasted for a week, until the newness wore off. Eventually three or four children gathered who really did need more to eat. It is important to also at various times note that we did have a group snack. We celebrated birthdays together, ate the things we cooked in school together, and had special tasting parties together. However, since we planned our days together, the children always knew ahead of time when they would eat together so that they could plan their own use of time accordingly. I found that it was also important that the children were warned well ahead of time how much time was left before they had to clean up their projects in preparation for a group snack time. Knowing that they could return to the same project later that day or the next day also made group snack a pleasant change and not a confusing opposition to their given independence.

## Accountability

Children were held responsible and accountable for the activities and projects they chose. They were required to share their work with one of the adults in the room for the teacher-child discussion before moving on to another project. This permitted several things to happen. These discussions were a means of helping individual children become increasingly more conscious of the problems they faced, of considering the alternatives available to them,

and evaluating their chosen course of action. It was also a chance for me to note the child's misconceptions, his growing skills, areas where he was having problems and ways that I could extend his learning.

Earlier in the year I had tried having each child daily record and evaluate his activities in a notebook. However, this was too difficult for mot of the children and too time-consuming for the adults whom they would seek out for help. Perhaps it was merely too early in the year to introduce such a method of recording and evaluating the child's decision making. It may be worth modifying and trying again when children were more mature. It has some merit in that a child must be conscious of the decision making process if he is to employ that skill to make a good decision in another situation. Merely being free to make lots of choices is not enough. The child must become aware of and skilled in each of the steps or he will merely make decisions automatically and not thoughtfully.

Often I would set up an interest center for an individual child or for a small group who needed further work in some area. Again, I would require that some time during their day or over several days these children work at that activity.

## Planning

The children shared actively in classroom planning. Frequently in our group news-planning time, we would take our calendar and schedule activities together. Pictures and labels were constantly attached to our calendar so the children could refer to and interpret the plans independently. Some blocks of time were left totally open for the children's ideas for things they felt we should do. For example, I asked the children to plan all the things they wanted to do in our room between Halloween and Thanksgiving vacation. Their list of ideas included: (1) making a variety of Thanksgiving

decorations to hang around the room, (2) making homemade bread, (3) having milk one day for snack instead of juice, and (4) cooking a turkey for a Thanksgiving feast. Together we figured out the necessary details and what days were best to carry out each plan. These were very meaningful chances to state the problem of what we wanted to do, list all the ways we could carry out our plans, and select the most feasible way to proceed.

## Using the Decision Making Process

For the sake of supervision by an adult, one block of time was set aside for going outside to play. Each child was free to choose whether he would go outside at that time or remain indoors with another adult to continue working on the project or activity in which he was involved. Children also had the choice of participating or not in a special weekly music activity away from the classroom with a music specialist. I found that the group was usually evenly distributed between those who chose to go to the music activity and those who chose to continue working in the classroom. I also found that everyone who chose to attend the music session participated actively,whereas, earlier in the year, when I took everyone, some children sat passively on the sidelines or disrupted the group. To me, this was an indication that an activity which a child chooses freely to participate in is one in which he is truly interested, and one in which he more readily tends to become involved. Our days ended with a group story time and usually some creative thinking experience. Almost all the children came daily to hear the story and participate in the game. The alternative for those who chose not to participate was to do puzzles quietly in a nearby area of the room where they could still hear what was happening.

Individual projects were an ideal way to increase awareness of the steps in the decision making process. I found it satisfying to discuss with

a child who wanted to build, create, display or share something what his problem was, what his choices were and what his plan of action was. Even more satisfying was to discuss the outcomes afterwards with the child when he proudly announced "Teacher, I'm ready for you now."

Cooking experiences afforded lots of opportunities to make decisions. Birthday children planned and cooked their own birthday treat. Sharing problems or problems in the block area were confronted with: "What's the problem?" "What can we do about it?" "Was that the best way to solve it?" I used words like choice, choose, decide, decision , and consequences freely and found that, soon, the children had incorporated those words into their vocabularies, too.

## CHAPTER FOUR

## CHILD-INITIATED PROJECTS

In addition to the teacher-planned experiences reported herein, an equally important part of the curriculum was to take a child's individually expressed interest and give him the opportunity and encouragement to extend his learning as far as possible. I believe that children learn best when they have a personal interest in what they are learning. I also believe that long term, continuing projects are more meaningful and lend themselves to involvement more than do a series of one shot, unconnected activities. Consequently, there were always many projects occurring simultaneously in our classroom. They lasted for varying amounts of time. Often a project would die out and then begin again along another course two or three weeks later. Cognitive skills and concepts were brought out and developed as they erupted within each project. Since this kind of curriculum building, a curriculum which stems from the children's interests, was a major thrust in my program, it would be impossible in the scope of this paper to include every individual project. However, several individual projects are next described to point out the differences in scope, content, and learnings of not only the projects themselves but of the children who originated them.

### The Police Car

For several days the five-year-olds were "playing policeman" in the kindergarten. A block sontruction became a jail and three navy blue caps became police hats. Outdoors, the tricycles became police cars while the

children provided the dialogue and self-sounds of police chasing and catching criminals. Noting this, I suggested the possibility of a visit to the local police station and arrangements were made. Officer Groves of the Hyattsville Precinct was our guide for the two-hour visit and his enthusiasm made him an instant friend. The five-year-olds were fascinated with what he explained to us--how an alarm is called into the station, the fingerprinting division, the security to get in and out of the jail, the small, barren jail cell, trying on handcuffs, and exploring a squad car. It was impressive to me to witness their deep concentration on all he told us and the number of thoughtful, sophisticated questions they asked.

The next day a visit of Corporal Stuart, a University of Maryland Campus Policeman, was arranged. He was to bring his cruiser for the children to see. Much to the children's delight, Corporal Stuart explained all the features of the police car, let them try out the lights, sirens and communication systems, and showed how flares and bomb blankets were safely utilized by the police force. He came back into our classroom to demonstrate a variety of finger-printing techniques and how money was invisibly marked. The kindergarteners repeated excitedly much of the wealth of information they had absorbed in the exciting two days.

Arriving at school the third day, a group of fives immediately brought out the blocks and built a "police car." As we talked about what they built and had seen the two previous days, one child said wistfully, "I wish this police car really worked!" "Well," I said, "let's talk about it and maybe we can figure out a way to build one that really works." Our project was underway! Together we scouted the school grounds and found the perfect old crate. We sat down around the crate and children made an initial list of all the features they wanted to put into their police car: "How are we

going to put the wheels on?" "How can we make a siren work?" "We gotta have a roof." "Can we make the lights work?" were part of the flood of eager questions that bombarded the discussion all at the same time. I suggested we all go home, think about it, talk it over with our parents, and all draw up plans of our ideas. I was impressed with the number of children who burst into the classroom the next morning with five-year-old sketches of their thoughts and ideas. I brought in car magazines. After sharing all our thoughts, we made a display of their plans and magazine cutouts with labels of the features our police car was to have. We started to work.

Our project lasted six weeks. About nine children stayed with the project throughout, while about six more periodically pitched in to help. The math and science concepts were beyond a standard kindergarten curriculum; the vocabulary growth and understanding impressive; the decision making and creative ways they used scrap materials were surprising and unending. Co-operation and communication increased among the children through their laughter, their successes and their frustrations. Perhaps what was the most valuable outgrowth of all was what they learned about each other. They saw skills in each other they never knew existed before. The children grew in self-esteem and valuing of each other as their police car grew.

The fives devised problem solving techniques of their own along the way. "Let's talk about it first" became a frequently used expression with each new building problem they met. They would list all their ideas and possible solutions and then make a final decision, often by vote. "How wide should we make the door?" They finally decided to measure the width of a classmate so "He can fit inside." "How high should the roof be?" was a tough one. They couldn't see beyond just resting wood on top of the crate, but decided that would make the inside space too cramped. A long time later and quite

accidently, one girl stood up inside the crate and another child yelled, "We can use the top of Laura's head to put the roof on!" They again got out the rulers to measure Laura because "she's one of the biggest kids and she may want to get in sometimes." Often suggesting the children sketch their idea seemed to help them visualize a problem easier. Such was the case this time in order to see Laura's height in relation to what lengths of wood were needed to support the roof to the sides of the crate. A parent told me later that, since the police car project, his child always wanted to "make plans." "Before then, whenever we did a project at home, he just jumped in. Now he says "Let's think about it first."

The children discovered that what one couldn't do, someone else could, and vice versa. Eric repeatedly said in awe, "Kendal can sure hammer good," noting Kendal's quick, powerful and on-target blow as they braced the door piece. A short time later, however, it was Kendal's turn to marvel at Eric's accuracy and power in sawing out the car door. Kendal had shown earlier that it was hard for him to manipulate and control a saw. New respect and a newly formed friendship! There was constant measuring and marking with this part of the project. The children also realized for the first time the need for accuracy.

Then came the exciting day when everyone wore old clothes to school and painted the wooden car with indoor-outdoor paint. It was rewarding to see the care and responsibility they accepted in using the materials. After five attempts at deciding upon the color of the car, the group decided to reach a compromise. Everyone agreed the interior was to be black. However, the outside color could not get beyond some for red, some for green, and some for blue. So it became a multi-colored red, green, and blue police car.

The children spent two days sorting through our 'junk box,' looking for appropriate gadgets for the car. In addition, they had been bringing in all

kinds of 'junk' from home which held great possibilities for controls and features. Two children found a long cardboard necklace box and decided that would make a good gas pedal. "But what'll you use for the brake pedal?," someone else asked. After talking it over, they agreed to use the top of the box for a gas pedal and the bottom for the brake. But there were more problems to solve and decisions to make. In stepping on the potential pedal to try it out, Suneel said, "This will never do," as the empty lid caved in under his weight. Someone else suggested, "Stuff it to make it hard" and that's what they went off to do. With newspaper, tape, and thick cardboard they traced a bottom piece.

By the time the children had finished, Alisa had found two small coiled springs which she thought ought to be nailed to the car floor "so the pedals will go up and down when you step on them." Eric worked hard at making a speedometer so that the numbers he printed would be "just the right size so they'll all fit on." John wanted to attach a microphone inside which he had found. He spent more than an hour looking for just the right case in which to rest his microphone. Finally, he found the perfect piece of styrofoam with a cavity just right for the microphone to fit snuggly horizontally inside with minor modification to accommodate the cord and knob. Two shiny tin tunafish cans were found for headlights. Children figured out how to build a small shelf on the front of the car to hold the battery. Stephne then went on to dig up an empty masking tape roll to nail on and support the battery as it rested inside. Although the children wrestled with one small problem after another, they never seemed to get tired. In fact, as they surmounted each one, they seemed to increasingly feel that they could handle anything. "Don't worry. We've got lots of ideas," Suneel said. Together we laid out battery, bulbs, wire, tuna cans, sockets, and switch, and pooled our ideas of how to wire the headlights. They waited patiently through two days of nailing,

screwing, and connecting wires. They worked with tiny screws, in narrow spaces, starting and restarting, but refusing to give up. Everyone gathered around as we finally were ready to throw the switch! Nothing happened. The children were disappointed but determined to figure out what was wrong. Two days of checking and rechecking the wiring, the screws, the bulbs, and finally to discover that both wires had to be attached to the same side of the switch. Were they excited and what a meaningful science lesson they had experienced!

Eric turned two plastic containers into red and blue blinking lights for the top and all that remained was to put the police car on wheels. For that, we had to call again on Eric's dad who worked in the Industrial Arts Department on Campus and who had been our consultant throughout the project. We needed his help and the machines in the Industrial Arts Building for the axles. The children did all the rest.

As the police car project proceeded, another side project developed. Mr. Yabu invited us to come on a trip to tour the Industrial Arts Department on Campus. He also arranged for each of the children to build a wooden boat while they were there. Each child completely built his own boat to Mr. Yabu's scaled plans--the sawing, sanding and hammering. The next day at school, those children who wished painted their boats. Mr. Yabu had also given each of the children a copy of the scaled plans for the boat and a booklet of diagrams of other simple wood projects. Much later, at our own classroom workbench, I saw some of the children implementing ideas from the booklet with their own creative touches in their own woodworking. The booklet had served to take the children one step farther in their thinking and opened up new possibilities for their creating with wood.

## The Two Wheeler

Stephen struggled each day at outdoor playtime for two weeks to teach himself to ride an old two wheeler bicycle that had been donated to our school. He would arrive early each morning and work with the bike till we went inside. Each playtime he worked at it again, determined to teach himself to balance on it and finally succeeded. His two weeks of determination and pride when he had finally mastered the skill could not go unnoticed by the other children. Not long afterwards, four other children began to try to do what Stephen had done. Stephen spent one whole morning watching them struggle. The next morning he said to them, "I can help you 'cause I already did it." Later I asked Stephen if he could think of another way he could help the other children learn to ride a two wheeler, besides helping them outside. Stephen dictated:

> You have to come down with your foot and pedal. You have to ask one of the teachers to help you and push you off to get started. And you go a little way and ask the teacher to push you off again. You gotta keep doing it.

His story was put into a book and a copy run off for each child.

## Tommy's House

Tommy loved to build with the large blocks. One day he built a long house, quite different in style from his usual small, high ones. He was so proud of his long house.

> "Look, Teacher, my LONG house, my LONG house."
>
> "I wonder just how long your house is, Tommy? Can you think of a way we could find out?"

After a few minutes of thought, Tommy ran over to get a yardstick out of our box of 'things to measure with.' When he put it down, there was still a lot of house left to be measured. Tommy thought, then raced back to the box and

brought back three rulers. Still some house left to be measured. He thought longer and harder this time, as that was all the rulers we had in the box. Suddenly, he flashed a big, broad smile and raced back to the measuring box. He dug for quite a few moments and turned up a paper tape measure that even I had forgotten about. Now he had enough rulers to measure his long house with.

"How are you going to add all these rulers up no, Tommy?"

He thought again for a very long time, and then went off to get a box of beans from the counter.

"One for each one," he said, meaning one bean for each ruler.

"But the rulers aren't all the same size," I said.

Again he thought for a long time. Flashing his broad smile once more, he picked up a 12" ruler, the smallest one there, and placed it against the yardstick, other rulers, and tape, from one end of the house to the other. Each time he did so, he put down one bean for each small ruler or foot. Afterwards, we talked about the ruler being one foot, the yardstick being three feet and so on. Then Tommy dictated:

> Tommy's house is 23" high. It is 9 feet and 15 inches long.
> It is 3 feet and 12 inches wide.

## The Telephone Book

One child was playing with a toy telephone. He asked me what was the weather number. I said I didn't know but we could go in the office and get out the phone book to look it up. That's what we did. We took paper and pencil along and copied it down, laboring over the way to make a 4. Before going back to the classroom, we stopped by my office so he could really dial the number and confirm that he got weather information. I let him play with the toy phone for a while. Later I asked him if he'd like to make a phone

book of other important telephone numbers. He went around the room for several days, asking everyone's phone number and laboriously printing the numbers into a phone book for the while class to use.

# APPENDIX A

## SOME SUGGESTED BOOKS

### Perceiving

Cherup, Beth and Ramsey, Helen. Things I Like to Do. Glendale, Calif.: Bowmar Publishing Company, 1969.

Green, Mary McBurney. Is it Hard? Is it Easy? New York: Scott-Foresman and Co., 1960.

Green, Mary McBurney. When Will I Whistle? New York: Franklin Watts, Inc., 1967.

Jaques, Ruth. Watch Me Indoors, Watch Me Outdoors. Glendale, Calif.: Bowmar Publishing Company, 1967.

Regniers, Beatrice Schenk de. The Shadow Book. New York: Harcourt, Brace and World, 1960.

Shortall, Leonard. John and His Thumbs. New York: William Morrow and Co., 1961.

### Senses

Borten, Helen. Do You Hear What I Hear? New York: Abelard-Schuman, Ltd., 1960.

Borten, Helen. Do You See What I See? New York: Abelard-Schuman, Ltd., 1959.

Brown, Margaret Wise. Winter Noisy Book. New York: Harper and Row, 1947.

Crume, Marion. Listen. Glendale, Calif.: Bowmar Publishing Company, 1968.

Elkin, Benjamin. The Loudest Noise in the World. New York: The Viking Press, 1954.

Martin, Bill, Jr. Let's Eat. New York: Holt, Rinehart and Winston, 1967.

Podendorf, Illa. The True Book of Sounds We Hear. Chicago: Children's Press, 1971.

Sicotte, Virginia. A Riot of Quiet. New York: Holt, Rinehart and Winston, 1969.

Webber, Helen. What is Sour? What is Sweet? New York: Holt, Rinehart and Winston, 1967.

## Emotions

Berger, Terry. I Have Feelings. New York: Behavioral Publications, Inc., 1971.

Craig, H. Jean. The Dragon in the Clock Box. New York: W. W. Norton and Co., 1962.

Ets, Marie Hall. Talking Without Words. New York: Viking Press, Inc., 1968.

Francoise. What Do You Want to Be? New York: Charles Scribner's Sons, 1957.

Keats, Ezra Jack. Peter's Chair. New York: Harper and Row, 1967.

McGinley, Phyllis. Lucy McLockett. Philadelphia: J. B. Lippincott Co., 1959.

Olsen, Ailen. Bernadine and the Water Bucket. Abelard-Schuman, Ltd., 1966.

## Creating

Calhoun, Mary. The Traveling Ball of String. New York: William Morrow and Company, 1969.

Ciardi, John. I Met a Man. Boston: Houghton Mifflin Company, 1961.

Emberly, Ed. The Wing on a Flea: A Book About Shapes. Boston: Little Brown and Company, 1961.

Juhl, Jerry. The Big Orange Thing. New York: Broadberry Press, 1969.

Keats, Ezra Jack. John Henry: An American Legend. New York: Pantheon Books, 1965.

Marine, Dorothy. Edward and the Boxes. Philadelphia: J. P. Lippincott, 1957.

Payne, Emmy. Katy No-Pockets. Boston: Houghton Mifflin Company, 1944.

Schlein, Miriam. The Pile of Junk. New York: Abelard-Schuman, Ltd., 1962.

Schwartz, Julius. I Know a Magic House. New York: McGraw-Hill Company, 1956.

Smith, William Jay. Typewriter Town. New York: Dutton, 1960.

Weiss, Harvey. The Expeditions of Willis Partridge. New York: Abelard-Schuman, Ltd., 1960.

APPENDIX B

FIGURE 1: HEIGHT AND BIRTHDAY GRAPHS

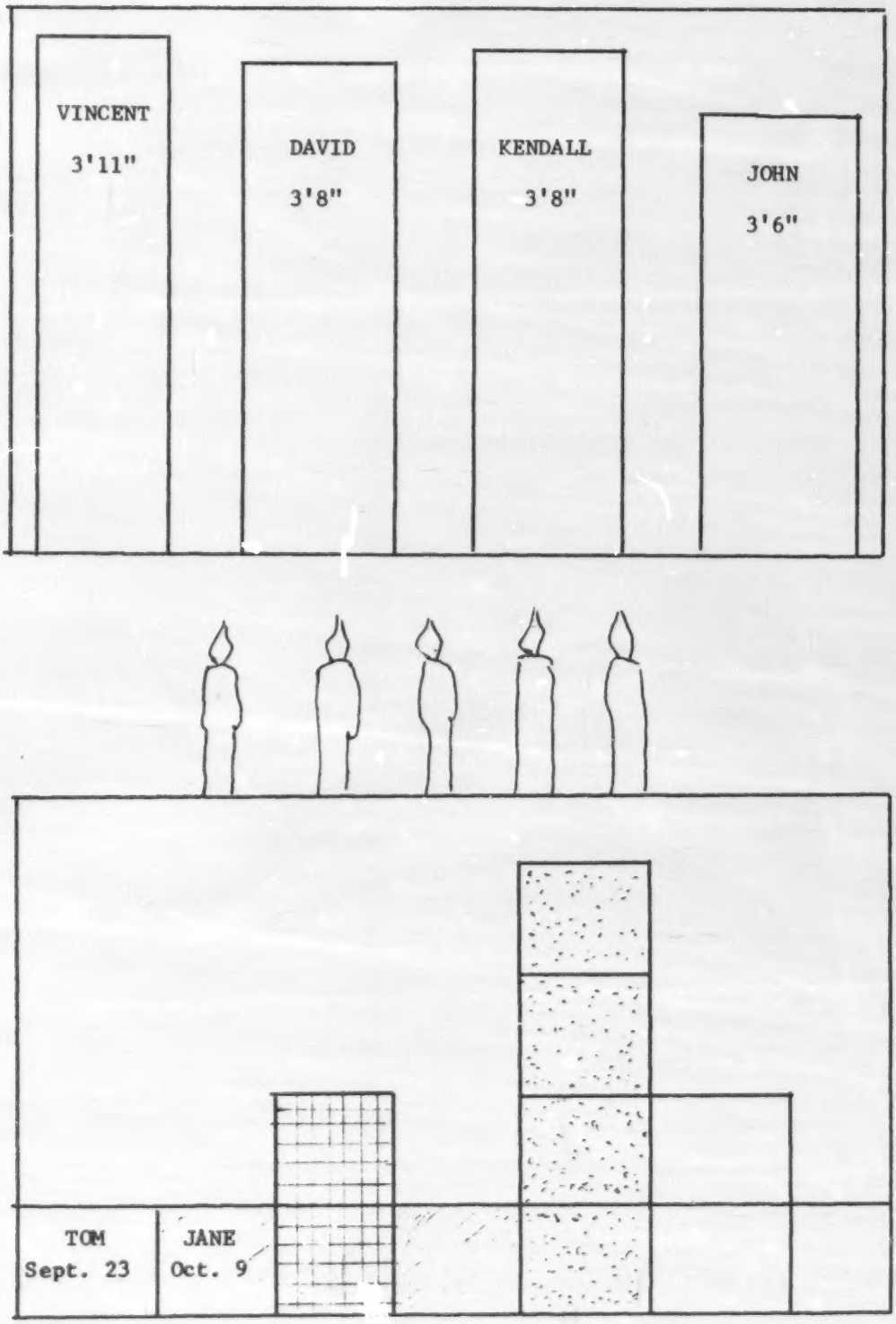
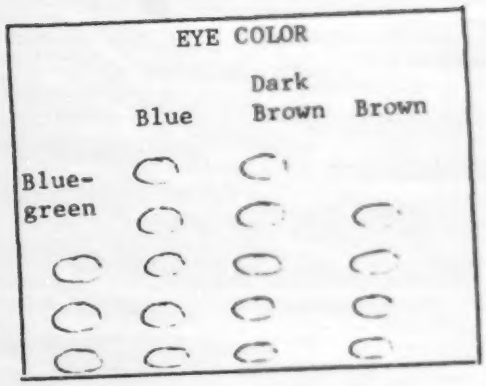
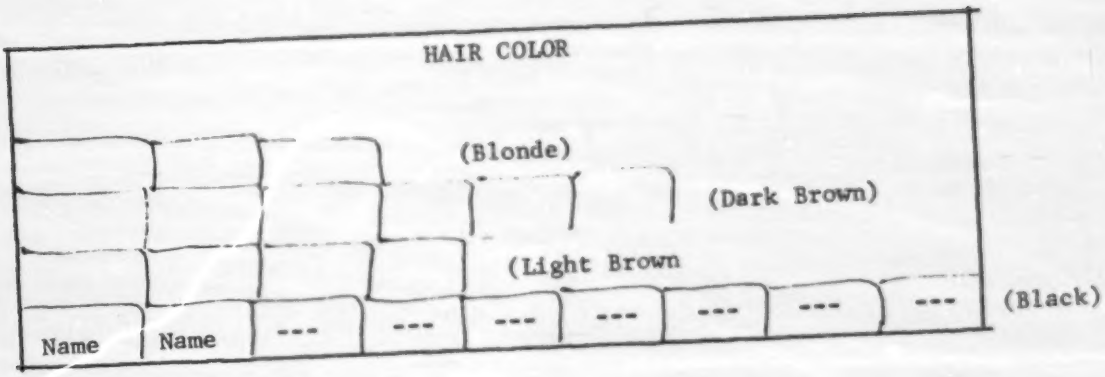
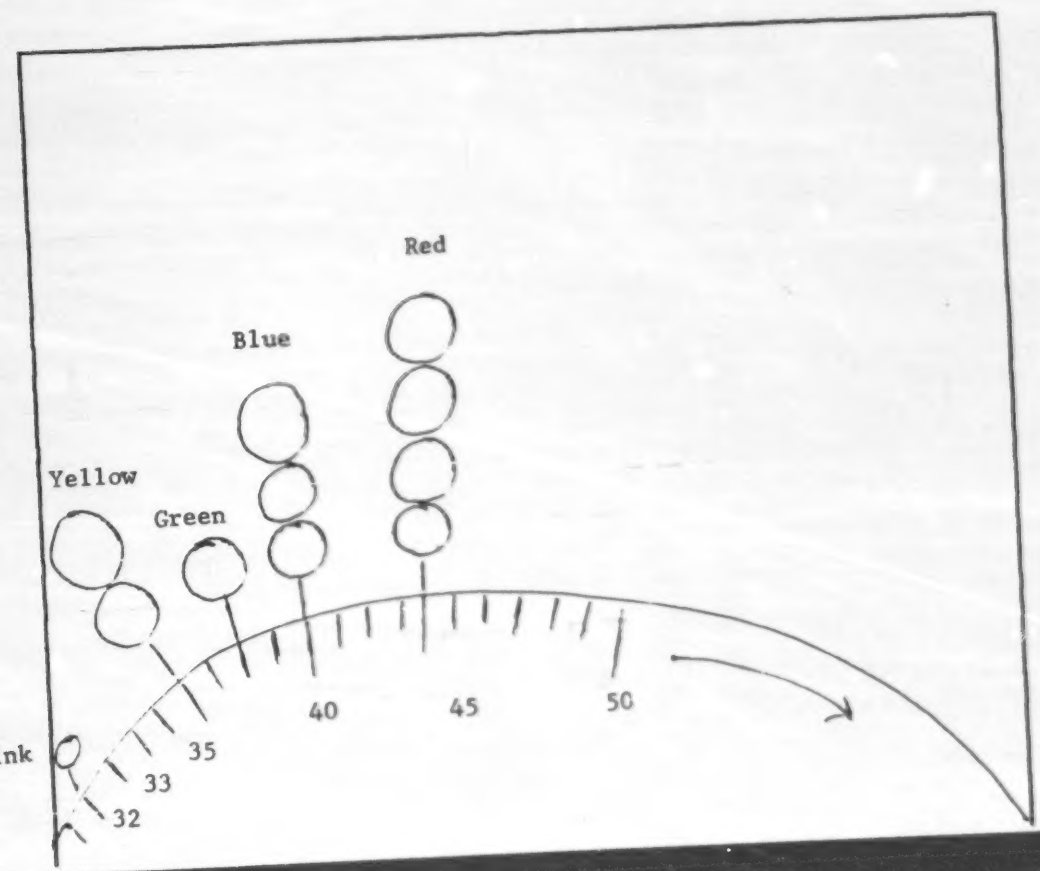


FIGURE 2: EYE COLOR, HAIR COLOR



# APPENDIX C

## DISPLAYS

1. What Can You Do With a Pocket? based on the book of the same title
2. Here We Are--self portraits
3. Things That Are Blue
4. The Sea
5. Autumn Foliage
6. Birds are . . . with the children's stories and pictures giving their ideas of what birds are
7. Rocks
8. Shoes--of all sizes and types, accompanied by poems and books
9. The Policeman--different kinds of policemen
10. Parts of a car
11. Photographs of the children in our room working on various projects